

# Respiratory Care

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## **RC101 Basic Science for Respiratory Care**

**Cr-2**

This course addresses topics in mathematics, physics, chemistry and microbiology related to respiratory care practice. Mathematical areas include graphing, nomograms and basic statistics. Physics and chemistry topics include the states of matter, humidity, gas pressure, gas laws, acids, bases, buffers, fluid dynamics, compliance, resistance, elastance and surface tension. A four-week module provides an introduction to microbiology at the end of the semester. Emphasis is placed on microbes that commonly involve the respiratory system. The course delivery mode is a hybrid on-line/on-site combination requiring attendance at microbiology lab sessions on the Utica Campus the last two weeks of class. Prerequisites: Appropriate high school GPA or placement test score or MA089 Arithmetic. A minimum grade of "C" is required. (Fall semester)

## **RC103 Cardiopulmonary Pharmacology**

**Cr-3**

This course presents the principles of pharmacology, drug actions, dosage calculations, and agents administered in cardiopulmonary care. It covers indications, side effects, hazards, and mechanisms of action, general categories, and classification of drugs. Respiratory, cardiovascular, neuromuscular, sedative-narcotic, and anti-infective agents are reviewed. Prerequisites: Appropriate high school GPA or placement test score or MA089 Arithmetic. A minimum grade of "C" is required. (Fall semester)

## **RC111 Principles of Respiratory Care 1**

**Cr-4**

This is the first course in the curriculum sequence to study the theory and practice of respiratory care. Topics include cardiopulmonary anatomy and physiology (including lung and cardiac function, mechanics of breathing, oxygen and carbon dioxide exchange, and control of ventilation), gas administration therapies, humidity and aerosol therapies and bronchial hygiene techniques. Prerequisites: Appropriate high school GPA or placement test score or MA089 Arithmetic. A minimum grade of "C" is required. (Fall semester)

## **RC112 Principles of Respiratory Care 2**

**Cr-4**

This is the second course in the curriculum sequence to study the theory and practice of respiratory care. Topics include lung expansion therapies, airway management, acid-base balance, and the interpretation of arterial blood gas results. Detailed information required to initiate, maintain, monitor, and wean patients from mechanical ventilation is provided. Prerequisites: A full year of high school general chemistry with laboratory (with a minimum grade of 70) within ten years or equivalent course with a minimum grade of C, RC101 Basic Science for Respiratory Care, RC103 Cardiopulmonary Pharmacology, and RC111 Principles of Respiratory Care 1. Corequisites: BI216 Human Anatomy & Physiology 1, RC115 Cardiopulmonary Diseases, and RC131 Clinical Practicum 1(a) or Program Coordinator consent. (a) Minimum grade of "C" required. (Spring semester)

## **RC115 Cardiopulmonary Diseases**

**Cr-3**

The initial portion of this course stresses the integral components of data collection, assessment, and evaluation necessary for the development of an effective care plan for patients with cardiopulmonary disorders. The remainder emphasizes the etiology, manifestations, and treatment of a variety of cardiopulmonary diseases. Case study presentations use critical thinking skills. Prerequisites: A full year of high school general chemistry with laboratory (with a minimum grade of 70) within seven years or equivalent courses with a minimum grade of C, RC101 Basic Science for Respiratory Care, RC103 Cardiopulmonary Pharmacology, and RC111 Principles of Respiratory Care 1. Corequisites: BI216 Human Anatomy & Physiology 1, RC112 Principles of Respiratory Care 2, and RC131 Clinical Practicum 1, or

Program Coordinator consent. Minimum grade of C required. (Spring semester)

## **RC131 Clinical Practicum 1**

**Cr-3**

This initial 135-hour hospital experience provides the supervised practice of routine respiratory therapies in a community clinical setting. Theories and skills learned in the classroom and laboratory are applied in actual patient care situations. The safe administration of therapies, maintenance of records, and infection control procedures are stressed. Prerequisites: Documented health physical examination within three months, including specific test results, liability insurance coverage, and current CPR for Healthcare Providers Certification are required for all students before the start of this course. A full year of high school general chemistry with laboratory (with a minimum grade of 70) within ten years or equivalent course with a minimum grade of C, RC101 Basic Science for Respiratory Care, RC103 Cardiopulmonary Pharmacology, RC111 Principles of Respiratory Care 1(a). Corequisites: BI216 Human Anatomy & Physiology 1 (a) and RC115 Cardiopulmonary Diseases, or Program Coordinator consent.(a) Minimum grade of "C" required. (Spring semester)

## **RC213 Principles of Respiratory Care 3**

**Cr-2**

This is the third course in the curriculum sequence to study the theory and practice of respiratory care. Topics include cardiopulmonary diagnostics and monitoring, special procedures (i.e., bronchoscopy and thoracentesis), critical care pharmacology, home care, and advanced management for the patient requiring mechanical ventilation. Prerequisites: BI217 Human Anatomy & Physiology 2, RC112 Principles of Respiratory Care 2, RC115 Cardiopulmonary Diseases, RC131 Clinical Practicum 1. Corequisites: RC232 Clinical Practicum 2, or Program Coordinator consent. Minimum grade of C required.

## **RC214 Acid Base Physiology**

**Cr-2**

This course covers the concepts of fluid and electrolyte balance, and the implications of the cardiopulmonary/ renal systems on acid-base homeostasis in the body. Focus is placed on the application of acid-base physiology in the clinical arena and its impact on patient management. Emphasis is placed on interpretation of fluid and electrolyte imbalance, and their interrelationships. Prerequisite: BI217 Human Anatomy & Physiology 2 (a) or instructor consent. (a) Minimum grade of "C" required. (Spring semester)

## **RC215 Principles of Respiratory Care 4**

**Cr-1**

This is the fourth course in the curriculum sequence to study the theory and practice of respiratory care. This concentrated offering presents topics related to neonatal and pediatric respiratory care. Content areas include neonatal and pediatric diseases, pharmacology, airway management, mechanical ventilation, high-frequency oscillation, and extracorporeal membrane oxygenation (ECMO). Prerequisites: RC233 Clinical Practicum 3, RC214 Acid Base Physiology, and BI209 Basic Pathophysiology. Corequisite: RC234 Clinical Practicum 4 or Program Coordinator consent. Minimum grade of C required. (Summer session)

## **RC232 Clinical Practicum 2**

**Cr-6**

This course provides opportunities to practice routine procedures and adult critical care during 270 hours of experience in a variety of clinical sites. Specialty rotations include pulmonary function testing, cardiac catheterization, cardiac diagnostics, respiratory homecare, polysomnography, radiology, and cardiothoracic surgery. Safe practice, critical thinking and problem solving are key components. Prerequisites: BI217 Human Anatomy and Physiology 2, RC112 Principles of Respiratory Care 2, RC115 Cardiopulmonary Diseases, and RC131 Clinical Practicum 1. Corequisites: RC213 Principles of Respiratory

Care 3, or Program Coordinator consent. Minimum grade of C required.  
(Fall semester)

### **RC233 Clinical Practicum 3**

**Cr-6**

This course involves 270 hours of experience in at least four clinical affiliates. Emphasis is placed on adult critical care experiences. Specialty rotations include a physician preceptorship, routine pediatric care, and Advanced Cardiac Life Support (ACLS) completion. Prerequisites: RC213 Principles of Respiratory Care 3, and RC232 Clinical Practicum 2 or Program Coordinator consent. Minimum grade of C required. (Spring semester)

### **RC234 Clinical Practicum 4**

**Cr-5**

This course provides opportunities to perform all aspects of respiratory care with emphasis on neonatal, pediatric and adult critical care during 225 hours of experience in a variety of clinical sites. Requirements are completed for American Heart Association (AHA) Neonatal Resuscitation Protocol (NRP) and Pediatric Advanced Life Support (PALS). Specialty rotations include extended ventilator care, critical care monitoring and patient assessment. Adult rotations provide a capstone experience to facilitate the transition from student to entry-level practitioner. Safe practice, critical thinking, problem solving and time management are key components. Prerequisite: RC233 Clinical Practicum 3. Corequisite: RC215 Principles of Respiratory Care 4. Minimum grade of C required. (Summer session)